carcasses for the purpose of accelerating rigor mortis of facilitating blood removal. These provisions do not apply to electrical equipment used to stun and/or slaughter animals or to facilitate hide removal. Electrical stimulating equipment consists of two separate pieces—the control system and the applicator. The EST control system contains the circuitry to generate pulsed DC or AC voltage for stimulation and is separate from the equipment used to apply the voltage to the carcass. The voltage is applied by inserting a probe that penetrates the carcass or is inserted in the rectum, placing a clamp in the nose, a carcass rubbar, a conveyor with energized surfaces traveling with the carcass, or any other acceptable method.

(b) *Safety requirements*—(1) *Circuits, grounding.* Either a bonded grounding conductor shall lead from each section of the carcass rail within the stimulating enclosure to the service ground, or the secondary voltage (stimulating circuit) shall be insulated from the service ground. If the stimulating section of the carcass rail and carcass drive mechanisms are insulated from the service ground then the stimulating rail or the return path shall be electrically bonded to the transformer secondary to isolate the stimulation voltage.

(2) *Enclosure.* Electrical stimulation shall occur in an area that will prevent persons from contacting an energized surface. If the area is surrounded by physical barriers, the enclosure shall be either electrically grounded or it shall be made of materials that do not conduct electricity. The interior of the stimulating area shall be visible from the start switch so the operator can be assured that there is no person, equipment or material present that should not be there prior to starting the stimulating sequence. If light or sound beam sensors form the enclosure, the stimulating equipment shall be automatically shut off when the sensor signals are broken.

(3) *Mandatory Warning Devices and Signals.* The following warning devices or signals shall be installed at each opening to the stimulating area through which a person would normally enter:

(i) A red light that flashes distinctly during the operating cycle of the stimulating equipment.

(ii) An ANSI Z53.1-Color Code sign reading (a) ''Danger Electrical Hazard'' for stimulating voltage below 50 or (b) ''Danger High Voltage'' for stimulating voltage above 50.

(iii) An emergency stop button.

(4) *Optional Warning Device—Horn or Bell.* If a warning horn or bell is installed, the signal shall be audible above background noises in the vicinity, and it shall sound for at least 1 second before each manual stimulation or before the carcass chain is started in an automatic system.

(c) Operation—

(1) *Training.* Only persons who have received safety instruction by the equipment manufacturer or designee may operate electrical stimulating equipment.

(2) *Cleaning and Maintenance.* To prevent an electrical shock to personnel, the electricity supplied to the stimulating surfaces shall be locked-off when cleaning, mechanical inspection, maintenance or testing are performed.

(3) *Water.* To prevent an electrical shock, personnel shall not spray streams of water on energized carcasses or on energized stimulating surfaces.

(d) Special provisions for manually operated equipment.

(1) Stimulating probes or clamps shall be stored in a sanitary container which is insulated with a material approved by the Administrator.[1]

(2) The electric wires attached to a clamp or probe shall not allow for contact between the probe or clamp and an electrical ground and shall not extend outside the enclosure.

[53 FR 46432, Nov. 17, 1988, as amended at 64 FR 56415, Oct. 20, 1999]

PART 308 [RESERVED]

[1] A list of approved insulation materials is available upon request from the Facilities, Equipment and Sanitation Division, Technical Services, Food Safety and Inspection Service, U.S. Department of Agriculture, Washington, DC 20250.